ABSTRACT OF THE DISCLOSURE

An apparatus generally having a first memory and a circuit is disclosed. The first memory may be used for a motion estimation of a current block. The circuit may be configured to (i) determine if a search window for the current block is at least partially outside a boundary of a picture stored in a second memory, (ii) copy a first plurality of reference samples in the search window from the second memory to the first memory and (iii) map a plurality of reads from the first memory for a plurality of pad samples to the reference samples in the first memory, where the pad samples are determined to be outside the boundary.